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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,344	11/25/2003	Alison J. McMillan	84714 3052 TAL	3908

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EXAMINER	
LIEW, ALEX KOK SOON	
ART UNIT	**PAPER NUMBER**
2624	
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07/24/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/720,344	MCMILLAN ET AL.	
	Examiner	Art Unit	
	ALEX LIEW	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 April 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. This office action is in response to the RCE filed on 4/22/08.

2. Response to applicant arguments:

I. On page 9 of the RCE filed, the applicant argues, “Atsumi does not disclose an apparatus or method that *automatically* selects a variable and relates the regions of interest to a region with a high rate of change of the variable.” The examiner agrees, however, Tsap discloses means to automatically select a variable from the data set such that a high rate of change of the variable indicates the regions of interest and a low rate of change of the variable indicates the regions of lesser interest (see paragraph 44, E is the defined as change in stress change over change in force per unit; see paragraph 47, [G] is the deformation gradient matrix, it is automatic because E does not need to be defined manually).

II. On page 10, the applicant argued:

The Examiner states TSAP et al. discloses means to select a variable from the data set such that a high rate of change of the variable indicates regions of interest and a low rate of change of the variable indicates regions of lesser interest at Page 4 paragraph 44 (E = change in stress/change in strain) and at Page 5 paragraph 47 (G = deformation gradient matrix). However, as reflected in step 310 (illustrated in Figure 3), the method of TSAP et al. searches for areas of lowest strain (Page 5 paragraph 55). This area of lowest strain is not an area that exhibits a high rate of change, as required in claims 1, 9, 17, 25 and 33-36, and high strain, as required in new claims 33-36. Furthermore, a low strain does not require a "rapid change in the stress field" as required in claims 4, 12, 20, 28 and new claims 33-36. At each region of "lowest strain" there is local, or global, minima, which by definition has a gradient, or rate of change, approaching zero. This is entirely opposite to the region of interest exhibiting "a high rate of change" as required in the present invention. The regions of high rate of change, or "abrupt variations in skin strain levels", are not identified in TSAP (Page 5 paragraph 55). These regions merely indicate the existence of an area with different material properties.

The discussion on paragraph 67 of Tsap shows that the region of interest is the highest strain.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1 – 4, 7 – 12, 15 – 20, 23 – 28, 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Atsumi (US pat no 6801665) in view of Tsap (US pub no 2001/0040997).

With regards to claim 1, Atsumi discloses a computer system programmed to process a large data set includes means for analyzing the data set and means for applying a data compression technique to the analyzed data set such that the compressed analyzed data set has high fidelity in regions of interest and has lower fidelity in regions of lesser interest (see figure 1, 104 and 105, the user selects region of interest which has more fidelity which are then compressed at 107 and 108). Atsumi does not disclose selecting a variable from the data set. Tsap discloses means to automatically select a variable from the data set such that a high rate of change of the variable indicates the regions of

interest and a low rate of change of the variable indicates the regions of lesser interest (see paragraph 44, E is the defined as change in stress change over change in force per unit; see paragraph 47, [G] is the deformation gradient matrix). One skilled in the art would include stress field and deformation parameters because to examine the material properties of a non-rigid object, to improve quality control of manufacturing object (see paragraph 2).

Atsumi and Tsap are combinable because both reference searches an image to find the region of interest and performing image analysis on the region.

With regards to claim 2, Atsumi discloses a computer system as claimed in claim 1, wherein data compression technique comprises the use of a wavelet compression technique (see figure 1, 101).

With regards to claim 3, Atsumi discloses a computer system as claimed in claim 1, wherein the data compression technique produces a high fidelity in geometric regions of interest at points in time of interest (see figure 9, where the geometric region of interest is a square).

With regards to claim 4, an extension to the arguments of claim 3, Tsap discloses geometric region has a rapid change in the stress field (see figure 6, area 602 maybe stretch to a degree where stress will occur).

With regards to claim 7, Atsumi discloses a computer system as claimed in claim 1, wherein means for analyzing the data set comprises a means for finite element analysis (see figure 9 – the region of interest has finite number of elements).

With regards to claims 9, see the rationale and rejection for claim 1.

With regards to claim 10, see the rationale and rejection for claim 2.

With regards to claim 11, see the rationale and rejection for claim 3.

With regards to claims 12, 20 and 28, see the rationale and rejection for claim 4.

With regards to claim 15, see the rationale and rejection for claim 7.

With regards to claim 8 and 16, see the rationale and rejection for claim 24.

With regards to claim 17, see the rationale for claim 1.

With regards to claim 18, Atsumi discloses a computer system as claimed in claim 1, wherein data compression technique comprises the use of a wavelet compression technique (see figure 1, 101).

With regards to claim 19, Atsumi discloses a computer system as claimed in claim 1, wherein the data compression technique produces a high fidelity in geometric regions of interest at points in time of interest (see figure 9, where the geometric region of interest is a square).

With regards to claim 23, Atsumi discloses a computer system as claimed in claim 1, wherein means for analyzing the data set comprises a means for finite element analysis (see figure 9 – the region of interest has finite number of elements).

With regards to claim 24, Atsumi discloses a local work station and a graphical display is produced at the local workstation (see figure 18, element 812 is a local work station display).

With regards to claim 25, see the rationale and rejection for claim 1.

With regards to claim 26, see the rationale and rejection for claim 18.

With regards to claim 27, see the rationale and rejection for claim 19.

With regards to claim 31, see the rationale and rejection for claim 23.

With regards to claim 32, see the rationale and rejection for claim 24.

3. Claims 5, 13, 21 and 29 are rejected U.S.C. 103(a) as being unpatentable over Atsumi ('665) in view of Tsap ('997) as applied to claim 1 further in view of Ransford (US pat no 5,490,221).

With regards to claim 5, Atsumi discloses all the limitations discussed in claim 1, but does not disclose analyzing data set which are 4D as described on page 1 of the specification lines 12 – 15. Ransford discloses analyzing data set, which are 4D data set (see figure 2, elements 20 and 22). One skilled in the ordinary art would include analyzing data set, which are 4D because to obtain greater details of the region of interest by including three dimensional data, to improve recognition of the region of interest in the image.

With regards to claims 13, 21 and 29, see the rationale and rejection for claim 5.

5. Claims 6, 14, 22 and 30 are rejected U.S.C. 103(a) as being unpatentable over Atsumi ('665) is view of Tsap ('997) as applied to claim 1 further in view of Board (US pat no 6499350).

With regards to claim 6, Atsumi and Tsap disclose all the limitations discussed in claim 1, but do not disclose analyzing data set of a fan blade containment analysis of a casing when a fan blade impacts a foreign object during use. Board discloses analyzing data set of a fan blade containment analysis of a casing when a fan blade impacts a foreign

object during use (see column 3, lines 50 to 56). of detecting defects because to find the shape and size of these regions to find the best compression ratio to compress the data where no desired data allowing the user to store more compressed data.

With regards to claims 14, 22 and 30, see the rationale and rejection for claim 6.

7. Claims 33 – 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Atsumi ('665) in view of Tsap ('997) and Sato (US pat no 5640462).

With regards to claim 33 to 36, see the rationale and rejection for claims 1 and 8. In addition, Atsumi and Tsap do not disclose presenting the most significant cross-sectional, wherein said most significant cross-sectional views contains at least one of a stress, deformation rate or other variable above a threshold. Sato discloses selecting the most significant cross-sectional, wherein said most significant cross-sectional views contains at least one of a stress, deformation rate or other variable above a threshold (see column 9, lines 38 to 43, the detected portion with a defect is read as the most significant area, and a cross section is taken at the defect location; the pixel values representing a defect appearing in an image will be greater that than adjacent pixels indicating a random edge). One skilled in the art would include presenting the most significant cross-sectional area because to allow the operator to perform necessary steps to correct the defect, further improving inspection process.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEX LIEW whose telephone number is (571)272-8623 or cell (917)763-1192. The examiner can be reached anytime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew C Bella/
Supervisory Patent Examiner, Art Unit 2624

Alex Liew
AU2624
7/21/08

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	10/720,344	MCMILLAN ET AL.	
	Examiner	Art Unit	
	ALEX LIEW	2624	